PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 30843	**FOR FURTHER ACTION**	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/SI 03/00040	International filing date *(day/month/year)* 07.11.2003	Priority date *(day/month/year)* 08.11.2002
International Patent Classification (IPC) or both national classification and IPC G09G3/00, G09F15/00, G09F19/02		
Applicant BABIC, Jan		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 7 sheets, including this cover sheet.

   ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of 2 sheets.

3. This report contains indications relating to the following items:

   - I ☒ Basis of the opinion
   - II ☐ Priority
   - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV ☐ Lack of unity of invention
   - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - VI ☐ Certain documents cited
   - VII ☐ Certain defects in the international application
   - VIII ☐ Certain observations on the international application

Date of submission of the demand	Date of completion of this report
02.06.2004	14.03.2005
Name and mailing address of the international preliminary examining authority: European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer Amian, D Telephone No. +31 70 340-3863

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/SI 03/00040

I. Basis of the report

1. With regard to the **elements** of the international application *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17))*:

Description, Pages

1-7 as originally filed

Claims, Numbers

1, 2 filed with telefax on 26.01.2005

Drawings, Sheets

1/2-2/2 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

   These elements were available or furnished to this Authority in the following language: , which is:

   ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).

   ☐ the language of publication of the international application (under Rule 48.3(b)).

   ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

   ☐ contained in the international application in written form.

   ☐ filed together with the international application in computer readable form.

   ☐ furnished subsequently to this Authority in written form.

   ☐ furnished subsequently to this Authority in computer readable form.

   ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

   ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

   ☐ the description, pages:

   ☐ the claims, Nos.:

   ☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

   (Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1,2
	No:	Claims	
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1,2
Industrial applicability (IA)	Yes:	Claims	1,2
	No:	Claims	

2. Citations and explanations

   see separate sheet

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Reference is made to the following documents:

   D1: WO99/41729
   (family member of SI 9 800 044 which was cited by the applicant)
   D2: US3160971

2. Claim 1

2.1 Document D1 discloses a device allowing simultaneous visibility of images in the area of 360 degrees around it in which image deformations due to the observation distance and observation angle are compensated using display surface deformation (page 4, lines 16 - 18).

The subject-matter of claim 1 (please refer also to paragraph 2.3 on clarity / support below) apparently differs from that disclosed in D1 in that a microprocessor controller is provided which adjusts the location of each image point to be seen by a spectator to a new location on the display wherein
- vertical coordinates are apparently modified in dependence on the length of a line of view and the distance of the point from the centre of the display and
- horizontal coordinates are apparently modified in dependence on the length of the line of view, the distance of the slot through which the display is observed from the display and the distance of the point from the central line of the display.

The subject-matter of claim 1 is therefore new (Article 33(2) PCT).

2.2 The object to be achieved by the distinguishing features is to provide a deformed image which will look correct when displayed using the device and the device is observed from a certain position (see also paragraph 2.3 below on clarity / support; for problem to be solved see also description of the application, page 1, paragraph 2 and page 2, paragraph 2).

D1 clearly indicates (page 8, last paragraph to page 9, first paragraph) that the curvature of the viewed picture, caused by a change in the viewing distance, can be avoided by "a display depending on the viewing distance", wherein "display" refers to the "electronic display" - and thus variable display - of figure 4.

The skilled person would thus consider to modify the displayed image (this would usually be done using a processor) to avoid the distortion of the observed image.
As D1 does not provide the needed information on the image transformation the skilled person would make a proper model for calculating the deformations involved.
The needed parameters are a matter of geometry and mathematical equations well-known to a man skilled in the art.
A correct model would thus be found using the normal skills of the skilled person and such a model would include horizontal and vertical correction components as claimed in claim 1.

Therefore the subject-matter of claim 1, as understood, does not involve an inventive step (Article 33(3) PCT) in the light of D1.

2.3 There are a few issues in claim 1 regarding clarity and support (Article 6 PCT). Most of those appear to be caused by imprecise use of the language.
Only the most important points, which are not related to the language, will be covered here:

a) The corrections as claimed would not necessarily lead to a device solving the given problem (see 2.2 above). Even though the parameters are claimed on which the deformation depends (length of line of view, distance of slot from display, ...) the amount of modification in the vertical axis and, more important, the amount and direction (dependent on parameters) of the modification in the horizontal axis are not given.
The claim thus covers deformations which do not solve the problem posed and therefore does not meet the requirements of Article 6 PCT.

b) Claim 1 in its present form claims that the display is one of:
i) a display with light points controlled by a microprocessor, ...

ii) a printed image
iii) a picture

The "characterizing" portion of claim 1 refers to a plurality of features which can only be implemented for case i) and not for the other two cases.
The claim therefore is not clear with respect to cases ii) and iii) and an opinion on novelty and inventive step can not be given for those cases.

3. Claim 2

3.1 Claim 2 is worded as being dependent on claim 1. It comprises further features with respect to cases ii) and iii) as explained in paragraph 2.3 above. As mentioned above cases ii) and iii) lead to clarity problems in claim 1. Accordingly claim 2 is also not clear (Article 6 PCT).

3.2 In the following an attempt is made to identify and consider the probably "intended" subject-matter of claim 2.

In the light of the description it would appear that claim 2 is meant to encompass "a device allowing simultaneous visibility of images in the area of 360 degrees around it" with a rotating shield and an observation slot.
The static image to be displayed is produced and transformed beforehand, then printed and mounted on a concave mounting behind the observation slot.
These features are known from D2 (figure 3; column 1, lines 47 - 65).

It appears that claim 2 was meant to further encompass that the image generation and transformation is done using a computer (reference to computer program in claim 2) and that a two-axis correction algorithm is used (as claimed in claim 1).

D2 refers to "affine geometrical transformations" (column 2, line 43). The skilled person knowing D2 would nowadays use a computer to transform the image. D2 also indicates parameters influencing the transformation (column 1, lines 60 - 65).
Triggered by those indications the skilled person would make a proper model of the deformations - and such a model would include horizontal and vertical correction

components as claimed. (See also paragraph 2.2 above.)

It is therefore considered that the subject-matter of claim 2, when understood as just explained, is new (Article 33(2) PCT) but does not involve an inventive step (Article 33(3) PCT) in the light of D2.

4. Further remarks

4.1 The claims were amended during the procedure to refer to a "printed image or picture". As the term "picture" is not used in the application this amendment is not in accordance with Article 34(2)(b) PCT for the case that an "printed image" and a "picture" are considered not to refer to the same subject-matter. If the terms are considered to refer to the same subject-matter the term "picture" is not needed in the claims.

4.2 The explanations in paragraphs 2.2 and 3.2 are based on the consideration that the skilled person would be able to make a mathematical model of all deformations without inventive skill.
If it would be assumed that the skilled person would not be able to do this, this would lead to the conclusion that the requirement of Article 5 PCT is not fulfilled as the application does not teach all details needed for solving the problem posed (as an indication on the missing details see paragraph 2.3 a) above).

Patent claims

1. A device allowing simultaneous visibility of images in the area of 360° around it, is made of a shield (1), preferably a cylindrical one, which rotates around its axle (2) with an optional drive (3), whereby the shield (1) has a coating with a slot (4) running approximately parallel to the axle (2), whereby the shield (1) has at least one display (5) on the diametral surface or near it, whereby this display is: an optional display with controlled light points, e.g. liquid crystals (LCD) or light-emitting diodes, and which renders it possible to show static or changing images and rotates simultaneously with the shield, whereby control of light-emitting points (12) of the display (5) is driven by a microprocessor (6) via a wire (7), preferably an optical line, entering the shield through the axle (2), whereby the shield (1) has a light sensor (8) enabling transmission of a signal from the static wire (7) to the rotating extension (7') of the wire (7); or printed image or picture, **characterized in that** between the processor (6) and the display (5) there should be a microprocessor controller (9), which adjusts the location of each image point to be seen by a spectator to a new location on the display (5),

by moving its vertical coordinate running parallel to the axle (2) to the edge of the image as a function of each length of a line (10) of view, i.e. the line length running from the eye (11) of the spectator through the slot (4) on the shield (1) up to a point (12) on the display (5), whereby it allows - also due to the rotation of the shield (1) - for a changing length of one part of the line (10) of view through the slot (4) to the point (12) on the display (5), and also the distance of the eye (11) from the shield (1), optionally hanging within the angle of 360° with the centre in the axle (2), whereby this correction diminishes by the increase of each line (10) of view and increases by the distance of each point (12) from the centre of the display (5), and

by moving a horizontal coordinate running perpendicularly to the axle (2) to its nearby lying edge of the display (5) running parallel to the axle (2) with respect to the length of the line (10) of view, the distance of the slot (4) from the display (5) and the distance of each point (12) from the central line of the display (5), allowing for each angle of the display (5) with respect to the line (10) of view.

2. A device according to claim 1, **characterized in that** a printed image or picture is an optional concave display showing a static image, which is a transformed image of the image, foreseen to be seen by the spectators, whereby said transformed image can be obtained by correcting a digital variant of an image we want to show to spectators - said image being obtained by scanning or creating a new digital image using an optional computer program - as shown in claim 1 and then by transferring the transformed image to a material carrier by means of printing or in any other known way and by using this image in the device of the present invention as a replacement for a LCD display.